

CLAIM OR CLAIMS

1. A non-rotating display wheel cover assembly connectable to a rotatable wheel and supporting axle of a vehicle comprising:

an adapter plate including a support bearing member concentrically positioned and supported by a support bearing hub of said adapter plate which also has mounting apertures adapted to align with threaded lugs rigidly attached to, and extending from, the axle in substantially coaxial alignment with a rotational axis of the wheel and axle;

a plurality of elongated wheel attaching lug nuts each threadably engagable from a first end thereof onto one of the wheel lugs which, when extended through aligned wheel mounting holes of the wheel, thereby rigidly connecting the wheel to the axle;

a distal second end of each of said lug nuts having an inwardly extending groove formed adjacent said second end and being sized for insertion through one of said mounting apertures of said adapter plate;

a retainer supported for limited substantially coaxial rotation only on said support bearing hub with respect to said adapter plate and between locked and unlocked positions, said retainer including radially extending spaced apart locking fingers or tabs each of which is sized in thickness and length to engage into a corresponding said groove of one said lug nut when said retainer is rotated into the locked

position whereby said retainer and said adapter plate are secured to said lug nuts and to the wheel, said retainer and said adapter plate being removable from said lug nuts for servicing said lug nuts or wheel removal when said retainer is in the unlocked position;

a circular wheel cover including a wheel cover locking support having a support shaft extending concentrically and orthogonally from an inside surface of said wheel cover, said support shaft supported for rotation in coaxial alignment, when fully engaged, with said support bearing member;

said wheel cover locking support including an elongated locking member having a distal end and an enlarged proximal end and held for rotation within, and substantially coextensive with, a longitudinal aperture formed through said support shaft;

a cam member connected to a distal end of, and rotatable with, said locking member, said cam member having a non-symmetric periphery with respect to a rotational axis of said locking member and having a first rotational orientation with respect to said support shaft wherein said support shaft and said locking member are fully insertable as a unit into said support bearing member to effect full attachment between said inner member and said wheel cover and a second rotational orientation wherein, after said support shaft and said locking member are fully inserted into said support bearing, said cam member prevents withdrawal of said support shaft from said support

bearing member, thus locking said inner member and said wheel cover together for relative rotation only therebetween;

a counterweight attached to said wheel cover to substantially prevent rotation of said wheel cover with respect to the vehicle as the wheel is rotated during vehicle movement whereby an interchangeable display indicia attached to an outer surface of said wheel cover remains substantially upright and readable during vehicle movement.

2. A non-rotating display wheel cover assembly connectable to a rotatable wheel and supporting axle of a vehicle comprising:

an adapter plate including a support bearing member concentrically positioned and supported by a support bearing hub of said adapter plate which also has mounting apertures adapted to align with threaded lugs rigidly attached to, and extending from, the axle in substantially coaxial alignment with a rotational axis of the wheel and axle;

a plurality of elongated wheel attaching lug nuts each threadably engagable from a first end thereof onto one of the wheel lugs which, when extended through aligned wheel mounting holes of the wheel, thereby rigidly connecting the wheel to the axle;

a distal second end of each of said lug nuts having an inwardly extending groove formed adjacent said second end and being sized for insertion through one of said mounting apertures of said adapter

plate, a shoulder of each said groove being larger than, and breaking against an edge portion of, said mounting aperture;

a retainer supported for limited substantially coaxial rotation only on said support bearing hub with respect to said adapter plate, said retainer including radially extending spaced apart locking fingers or tabs each of which is sized in thickness and length to engage into a corresponding said groove of one said lug nut after said distal ends of each said lug nuts are passed through corresponding said mounting apertures when said retainer is rotated in one direction into a locked position whereby said retainer and said adapter plate are secured from substantial movement to said lug nuts and to the wheel, said retainer and said adapter plate being removable from said lug nuts for servicing said lug nuts or wheel removal when said retainer is rotated in an opposite direction to an unlocked position;

a circular wheel cover including a wheel cover locking support having a support shaft extending concentrically and orthogonally from an inside surface of said wheel cover, said support shaft supported for rotation in coaxial alignment, when fully engaged, with said support bearing member;

an elongated releasable locking member for releasably locking said adapter plate and said wheel cover together in spaced apart relation one to another for relative rotation only therebetween;

a counterweight attached to said wheel cover to substantially prevent rotation of said wheel cover with respect to the vehicle as the wheel is rotated during vehicle movement whereby an interchangeable display indicia attached to an outer surface of said wheel cover remains substantially upright and readable during vehicle movement.

3. A non-rotating display wheel cover assembly connectable to a rotatable wheel and supporting axle of a plurality of vehicles, each vehicle having a different wheel mounting lug pattern, comprising:

a universal adapter plate including a support bearing member concentrically positioned and supported by a support bearing hub of said adapter plate which also has mounting apertures adapted to align with threaded lugs of each of the lug patterns of each vehicle and being rigidly attached to, and extending from, the axle of each vehicle in substantially coaxial alignment with a rotational axis of the wheel and axle;

said adapter plate having a partially enclosing cavity open on one side thereof formed over each of said mounting apertures;

a plurality of elongated wheel attaching lug nuts each threadably engagable from a first end thereof onto one of the wheel lugs which, when extended through one of the patterns of aligned wheel mounting holes of the wheel, thereby rigidly connecting the wheel to the axle;

a distal second end of each of said lug nuts having an inwardly extending groove formed adjacent said second end and defining a distal head

portion sized for closely aligned insertion through one of said mounting apertures of said adapter plate;

an interior side surface of each said cavity substantially continuous with said mounting apertures for supportingly receiving said distal head portions, a distal end surface of each said distal head portion bearing against a bottom surface of said cavity to properly position said grooves in said mounting apertures;

a retainer supported for limited substantially coaxial rotation only on said support bearing hub with respect to said adapter plate and between locked and unlocked positions, said retainer including radially extending spaced apart locking fingers or tabs each of which is sized in thickness and length to engage into said open sides of said cavity and into said groove of one said lug nut when said retainer is rotated into the locked position whereby said retainer and said adapter plate are secured to said lug nuts and to the wheel, said retainer and said adapter plate being removable from said lug nuts for servicing said lug nuts or wheel removal when said retainer is in the unlocked position;

a circular wheel cover including a wheel cover locking support having a support shaft extending concentrically and orthogonally from an inside surface of said wheel cover, said support shaft supported for rotation in coaxial alignment, when fully engaged, with said support bearing member;

said wheel cover locking support including an elongated locking member having a distal end and an enlarged proximal end and held for rotation within, and substantially coextensive with, a longitudinal aperture formed through said support shaft;

a cam member connected to a distal end of, and rotatable with, said locking member, said cam member having a non-symmetric periphery with respect to a rotational axis of said locking member and having a first rotational orientation with respect to said support shaft wherein said support shaft and said locking member are fully insertable as a unit into said support bearing member to effect full attachment between said inner member and said wheel cover and a second rotational orientation wherein, after said support shaft and said locking member are fully inserted into said support bearing, said cam member prevents withdrawal of said support shaft from said support bearing member, thus locking said inner member and said wheel cover together for relative rotation only therebetween;

a counterweight attached to said wheel cover to substantially prevent rotation of said wheel cover with respect to the vehicle as the wheel is rotated during vehicle movement whereby an interchangeable display indicia attached to an outer surface of said wheel cover remains substantially upright and readable during vehicle movement.

4. A non-rotating display wheel cover assembly connectable to a rotatable wheel and supporting axle of a plurality of vehicles, each vehicle having a different wheel mounting lug pattern, comprising:

a universal adapter plate including a support bearing member concentrically positioned and supported by a support bearing hub of said adapter plate which also has mounting apertures adapted to align with threaded lugs of each of the lug patterns of each vehicle and being rigidly attached to, and extending from, the axle of each vehicle in substantially coaxial alignment with a rotational axis of the wheel and axle;

said adapter plate having a partially enclosing cavity open on one side thereof formed over each of said mounting apertures;

a plurality of elongated wheel attaching lug nuts each threadably engagable from a first end thereof onto one of the wheel lugs which, when extended through one of the patterns of aligned wheel mounting holes of the wheel, thereby rigidly connecting the wheel to the axle;

a distal second end of each of said lug nuts having an inwardly extending groove formed adjacent said second end and defining a distal head portion sized for closely aligned insertion through one of said mounting apertures of said adapter plate;

an interior side surface of each said cavity substantially continuous with said mounting apertures for supportingly receiving said distal head portions, a distal end surface of each said distal head portion bearing

against a bottom surface of said cavity to properly position said grooves in said mounting apertures;

a retainer supported for limited substantially coaxial rotation only on said support bearing hub with respect to said adapter plate and between locked and unlocked positions, said retainer including radially extending spaced apart locking fingers or tabs each of which is sized in thickness and length to engage into said open sides of said cavity and into said groove of one said lug nut when said retainer is rotated into the locked position whereby said retainer and said adapter plate are secured to said lug nuts and to the wheel, said retainer and said adapter plate being removable from said lug nuts for servicing said lug nuts or wheel removal when said retainer is in the unlocked position;

a circular wheel cover including a wheel cover locking support having a support shaft extending concentrically and orthogonally from an inside surface of said wheel cover, said support shaft supported for rotation in coaxial alignment, when fully engaged, with said support bearing member;

an elongated releasable locking member for releasably locking said adapter plate and said wheel cover together in spaced apart relation one to another for relative rotation only therebetween;

a counterweight attached to said wheel cover to substantially prevent rotation of said wheel cover with respect to the vehicle as the wheel

is rotated during vehicle movement whereby an interchangeable display indicia attached to an outer surface of said wheel cover remains substantially upright and readable during vehicle movement.

5. For a non-rotating display wheel cover assembly having a circular wheel cover and a wheel cover locking support, the wheel cover assembly supported by a rotatable wheel and supporting axle of a vehicle a quick-release assembly operatively positioned between and attachable to a wheel rim and the wheel cover assembly, comprising:

- an adapter plate including a support bearing member concentrically positioned and supported by a support bearing hub of said adapter plate which also has mounting apertures adapted to align with threaded lugs rigidly attached to, and extending from, the axle in substantially coaxial alignment with a rotational axis of the wheel and axle;

- a plurality of elongated wheel attaching lug nuts each threadably engagable from a first end thereof onto one of the wheel lugs which, when extended through aligned wheel mounting holes of the wheel, thereby rigidly connecting the wheel to the axle;

- a distal second end of each of said lug nuts having an inwardly extending groove formed adjacent said second end and being sized for insertion through one of said mounting apertures of said adapter plate, a shoulder of each said groove being larger than, and breaking against an edge portion of, said mounting aperture;

a retainer supported for limited substantially coaxial rotation only on said support bearing hub with respect to said adapter plate, said retainer including radially extending spaced apart locking fingers or tabs each of which is sized in thickness and length to engage into a corresponding said groove of one said lug nut after said distal ends of each said lug nuts are passed through corresponding said mounting apertures when said retainer is rotated in one direction into a locked position whereby said retainer and said adapter plate are secured from substantial movement to said lug nuts and to the wheel, said retainer and said adapter plate being removable from said lug nuts for servicing said lug nuts or wheel removal when said retainer is rotated in an opposite direction to an unlocked position;

a support shaft of the wheel cover locking support extending concentrically and orthogonally from an inside surface of the wheel cover into and being supported for rotation within said support bearing member and being retained thusly by a releasable locking member of the display wheel cover assembly for relative rotation only therebetween.

6. A non-rotating display wheel cover assembly connectable to a rotatable wheel and supporting axle of a vehicle comprising:

an adapter plate including a support bearing member concentrically positioned and supported by a support bearing hub of said adapter plate which also has mounting apertures adapted to align with threaded lugs rigidly attached to, and extending from, the axle in

substantially coaxial alignment with a rotational axis of the wheel and axle;

a plurality of elongated wheel attaching lug nuts each threadably engagable from a first end thereof into one of the threaded axle hub holes;

a distal second end of each of said lug nuts having an inwardly extending groove formed adjacent said second end and being sized for insertion through one of said mounting apertures of said adapter plate, a shoulder of each said groove being larger than, and breaking against an edge portion of, said mounting aperture;

a retainer supported for limited substantially coaxial rotation only on said support bearing hub with respect to said adapter plate, said retainer including radially extending spaced apart locking fingers or tabs each of which is sized in thickness and length to engage into a corresponding said groove of one said lug nut after said distal ends of each said lug nuts are passed through corresponding said mounting apertures when said retainer is rotated in one direction into a locked position whereby said retainer and said adapter plate are secured from substantial movement to said lug nuts and to the wheel, said retainer and said adapter plate being removable from said lug nuts for servicing said lug nuts or wheel removal when said retainer is rotated in an opposite direction to an unlocked position;

a circular wheel cover including a wheel cover locking support having a support shaft extending concentrically and orthogonally from an

inside surface of said wheel cover, said support shaft supported for rotation in coaxial alignment, when fully engaged, with said support bearing member;

an elongated releasable locking member for releasably locking said adapter plate and said wheel cover together in spaced apart relation one to another for relative rotation only therebetween;

a counterweight attached to said wheel cover to substantially prevent rotation of said wheel cover with respect to the vehicle as the wheel is rotated during vehicle movement whereby an interchangeable display indicia attached to an outer surface of said wheel cover remains substantially upright and readable during vehicle movement.